Foreman of Yesterday,
Today and Tomorrow

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THE FOREMAN OF YESTERDAY, TO-DAY, AND TO-MORROW, HIS SELECTION AND TRAINING.

A thesis presented to the Faculty
of the Graduate School of the University of Pennsylvania, in partial fulfilment of the degree of
Master of Business Administration

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Chapter I Introductory

The material framework of modern civilization is the large-scale industrial system, and the directing force which animates this framework is the artificial being known as a corporation. With the development of the modern capitalistic system, conditions early appeared which made it impossible for the individual entrepreneur to launch a business establishment, assume risks, and exercise direct control. The corporate form of industry, under which the ownership is scattered among perhaps several thousand stockholders, becomes therefore inevitable. Under the corporate system, delegation of authority assumes a great importance in management and operation. It is a natural consequence that there has developed a "line" organization made up of a set of officials directly charged with responsibility for management and operation. At one end of this line is the president, or perhaps a vice-president in charge of production. At the other end, and directly in contact with the workers, is the foreman.

The foreman is really the key man in the modern industrial establishment. To the workers of the rank and file, he represents the capital and the management. He is looked upon as "the capital" because he is the visible symbol of those unseen absent owners, who employ labor and pay wages. He is looked as "the management" because the wage-earners judge everything connected with the management in terms of the sort of treatment received from him. In the eye of the production manager, the foreman is the boss of the workmen

and is given the responsibility for satisfactory production in the shop. From the view point of the personnel manager, the foreman is both the spokesman of the laborers and the representative of the management and is charged with the mission of transmitting views of both sides.

Under the present complicated industrial organization, in which specialization and competition are paramount, the problem of training and selecting capable foremen to meet the needs should gain an increasing attention of the forward-looking business management. Executive of today should realize that not every capable workman is qualified for promotion to foremanship, and that even those who possess the requisite natural traits need carefully training before they are entrusted with the infinitely delicate task of managing man and the complicated task of handling production. It is recognized that the man elevated to a position of authority ought to be instructed in regard to the general business and the policies of his employer. An important justification of foreman training therefore, lies in the purpose to give officials the needed knowledge regarding the broader aspects of the enterprise in which they are engaged. In the second place, the foreman usually comes to his position of authority with an insufficient knowledge of the technic of his own job. To supply this lack and to avoid the costly process of gaining knowledge by the method of trial and error, a properly devised foreman training course is invaluable. Furthermore, the adquately trained foreman will be able better to perform his duties of handling man and supervising

production because he has more thoroughly grounded in the theory and the technic of the productive processes and man handling methods.

The present paper is to make first a study of the past and present methods of foreman selection and training. Based upon this study, better and possible methods are then suggested, analyzed, and compared. Although many different available methods both in selecting and training have been treated at the latter part of the paper, it is safe to say that no one method should be more highly endorsed than the other. Combinations or modifications of methods are usually desirable but must be worked out through an analytic study of the existing conditions and a determination of purposes to be accomplished in each case.

Chapter II The Early Foreman

The story of civilization is the history of advance in two distinct lines: one, the material side of this advance, is the record of man's increasing mastery over his physical environment; the other the general improvement in his methods of working with others, either through compulsory cooperation under a trial head or ruler or through voluntary cooperation by mutual consent.

It has been suggested that one of the earliest forms of cooperation under a leader was the hunting pack, when the prehistoric man went after his big game. In this and similar forms of the most primitive cooperation doubtless one man dominated -- the strongest or the more crafty. So long as the grouped engaged was small and the object obtained simple, the leadership of one individual was only necessary; but as soon as the group had to be divided -- for instance to head off the animal that was being pursued -- a sub-leader had to be appointed and the first step in the development of foreman and sub-foreman had been taken.[1]

Under such an arrangement of the crude form of leadership, the work could be carried on a better advantage and the object could be attained with ease. Each man could be put on the part of the "team job" that he could do best, or some one man could do the planning for the group, or all members of the group could look to one man for orders and direction. This group leader had therefore to plan, direct and even instruct his force in order to accomplish what the group wanted to. Indeed,

he was the foreman or the sub-foreman in that group of men, so far as his function went, although he was not known by such a name.

The job of ef the foreman is, however, as old as the mankind, yet the name "foreman" has very seldom been mentioned in the history of human activity. According to Charles R. Allen the name "foreman" has become in use only since the day of the old trade gilds in Europe, when groups of workers wanted a representative to speak for them, they chose one of the older or better workman to "come to the fore"; that is, to be the foreman[2]

In descriptions of ceremonies in connection with those old trade guilds, there is mention of the different groups of workers, "led by their foreman", taken part. The so-called foreman in that time did not only represent different groups, but on some occasions, groups of foremen set together, each of them representing his own group, to discuss matters on which the different working groups had a common interest.[3] This signifies that the foreman's conference is just an old affair as the word "foreman". In the succeeding chapters, the evolution of foreman and his function since the introduction of factory system will be discussed.

1. Reed, W. M., "The Military Type of Organization," Bulletin of the Taylor Society, Vol. 8, No. 4, p. 142.
2. Allen, C. R., The Foreman and His Job, p. 3.
3. Ibid, p. 4.

Chapter III The Foreman of Yesterday

In those small shops of the old days, the so-called one-man organization or the military type organization was in practice. The foreman, as a head of the organization, did play a very important role. "Holding the foreman responsible for the results" was the keynote of the employer. There were the shop, the force and the equipment, and the employer, who could not be bothered with what went on inside the shop, would simply hold the foreman responsible for the results.[1] In consequence, the foreman became the tyrant in his shop, because he must be given the power and authority to hire and fire, to buy equipment, and machinery and tools, to specify materials, to decide shop rules and many other things in connection with the production.

He received materials, raw or partly machined or ready for assembling and put them through his shop with an eye to his immediate objective of quality, quantity and economy of production completed on scheduled time. In case of shortage of any of these materials, he had then to purchase them from outside or to make them in the shop.[2]

In dealing with machine, the foreman needed to know the capacity of individual machines and the up-keeping of them so that nothing might interfere with the sequence of production. He must route the various jobs to the right machine and at the same time he must be a machinist himself. He must be able to read drawings readily, plan ahead and see that the right jigs, clamps and appliances, as well as proper cutting-tools were on

hand so that the work could be set in the machine correctly and the metal cut at the right speed and feed. When the machine was no longer useful, he must be able to repair it himself. He needed also frequently to instruct his men to oil and care for the machine properly so as to keep them in good shape.[3]

In connection with money, the foreman was charged with the responsibility for production at minimum cost. Thus, he must possess a knowledge that production at minimum cost meant proper realization of necessity for directness of action, balance of production and particular reduction of waste. He was not only responsible for cost of production but also for the quality of production.[4]

Among the other important functions, the foreman hired his men, assigned the individual job to them, supervised them at their work, and discharged them without appeal on any pretext. He also decided mechanical methods for men to pursue at the work, the number of pieces to start on each operation, and the time in which the work could be applied. He set their wages and granted or withheld increases in their rates. He had to instruct the men for operations or to discipline them for certain errors.[5]

The average old-type foreman came up to his position of authority through the ranks. The selection was mainly based upon impression, or trusted to demonstration. Sometimes selection was greatly due to family influence. It was based upon the employer's likes or dislikes that impression was created.

Sentiments did play the important part in this kind of selection. Demonstration was considered to be a better method of selecting and developing foreman in those old days. When a vacancy occured in the ranks of the foremen, a man was selected either from the group of workmen or from some smaller supervisory position, and he was tried out. He was given more or less assistance, advice and guidance by his superiors and if he adapted himself to his new position, he soon grew to be a foreman; if not, another selection was made and the experience repeated.[7]

Family influence had much to do with the selection of foremen in those old days. A father in business with several sons often appointed these sons as foremen in the shops. The shop became entirely a family affair. Sometimes, a son might succeed his father as the foreman, either because the business was under a family control or that the employer took it as a reward to the son for his father's merits.[8]

Since most of the old-type foremen were picked up from rank and file, their training was always limited in the field. usually men were being trained only under an emergency, because the importance of foreman training was not very much realized in ordinary times. The field training of foremen in these old days, however, did furnish an excellent means of increasing potential capacity for responsibility, because it left everything for the man to take care of himself. If the man was really able and intelligent, he might through observation and experience, learn what went on daily in the shop. He could realize the success of his training only when he was promoted from a lower

position to a higher position. Of course this system always suffered under the handicap of lagging behind the demand of a particular industry.[9]

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1. Coburn, F. G., "Foreman's Responsibility and Authority," Industrial Management, Vol. 53, No. 6, p. 349.
2. Clark, C. C., "Qualifications of Foremanship," Industrial Management, Vol. 56, No. 3, p. 199.
3. Taylor, F. W., Shop Management, pp. 96-98.
4. Clark, C. C., Op. Cit., p. 200.
5. Ibid.
6. Emerson, H., "Creation of Organization," read before annual meeting of Efficiency Society, N. Y., Jan. 28, 1913.
7. National Personnel Association, Foreman Training Method, p. 23.
8. Keir, M., Manufacturing Industries In America, p. 68.
9. National Personnel Association, Loc. Cit.

Chapter IV The Functional Foreman

In the previous chapter it has been pointed out that the functions of the all-round line foreman were so varied and called for an amount of special information coupled with such a variety of natural ability, that only man of natural qualities to start with, and who had years of special training could perform them in a satisfactory manner. The getting of suitable foreman becomes therefore very difficult or even impossible and consequently a miscellaneous machine works starting in on large scale and meeting with much success in those old days was seldom found. Because of this reason, Frederick W. Taylor, at the close of the nineteenth century, had worked out a system called the"functional foremanship" to take the place of the all-round line foreman. It is interesting to observe here that early in 1832, Charles Babbage, the eminent English economist and mathematician, had already suggested the extension of specification beyond manual labor to mental labor, in his book, "The Economy of Manufacturing". But it was not until 1900 that Frederick W. Taylor began to publish his doctrines of functional foremanship and the separation of planning[1] from execution.

By functional foremanship, it is meant the splitting up among several individuals of duties usually discharged by a single foreman. Each of these individuals is specialist in the particular line in which he is assigned, and is trained to the highest efficiency in discharging the particular duties of that line. The work of each specialist or functional foreman supplements that of the others, and their duties are so defined

that none should interfere with the other foremen.[2]

According to Taylor, the various functional foremen are known as: order of work and route clerk, instruction card man, cost and time clerk, gang boss, speed boss, repair boss, inspector and disciplinarian. The first three are in the office or planning room. The next four are in the shop, while the disciplinarian may spend his time regualrly in either shop or office.[3]

The order of work and route clerk's duty starts immediately when the order, drawings, bill of materials and other specifications of every job that is to be done in the shop come to the planning room. He then makes a study of the job and decides on the best methods to follow in doing it. He not only decides on the operations necessary but the exact sequence in which these operations should be performed. After having determined these things, the route clerk will make a list showing the course of the piece through the shop, the machine at which it stops, and the sequence of operations at these machines. In addition to routine the individual piece, as above described, the route clerk daily issues a list of work to the shop showing the order in which the various jobs are to be performed by every class of machine or men.[4]

The instruction card man's job begins with receiving the route sheet prepared by the order of work and route clerk. He will study the drawing and route sheet, and from these studies he will prepare detailed directions in language that can not be misunderstood, on a card, adding sketches to make his meaning

clear if necessary. He will detail on the card the tool to use, how they are to be set, the feed to use, the speed of the machine, the depth of cut, the method of setting and clamping the work in the machine, the sequence of minor operations at each tool, and so on. He will tell in advance the story of doing the work. If such record is at his disposal, the instruction card man will prepare these instructions from standards already established, or from records of previous jobs. Also if time study has been made in the shop, the instruction card man will indicate opposite each operation in length of time which a good workman should not exceed in doing that operation.

The gang boss, speed boss and inspector are the three persons in the shop who have direct connection with the job. The gang boss will know in advance, by means of order of work sent him by the planning department, for instance, on which planer the table is to be machined, and in just what order, in reference to the other work of the shop, it is to be done. Before the previous job in the planer is finished, the gang boss will ascertain from the sheet of the milling machine table, the location of the casting, and he causes it to be moved to the planer by a laborer in advance of the time it is needed. He also learned from the tool list furnished him by the planning department the planning tools needed, the number, shape of straps required to hold the table on the planer bed, the number of size of bolts required for the straps, the number and size of blocks for the outter ends of the steps, the pins and wedges and other fastening appliances which will be needed and

also all the gages will be required in the measuring and setting of the bed. The gang boss will have the tool room get these tools together, and before the man at the planer is ready for them, he will send them to his machine. He will also over-see the putting in the planer of the milling machine table, and will see that it is set up correctly and fastened in accordamce with the directions of the instruction card. Until the inspector passes it, the gang boss will once more have the work come under his jurisdiction for movement to the next machine.[6]

The work once in the machine will be under the charge of the speed boss. He will see that the piece is machined in the way laid out by the planning department. He will see that the tools are set correctly, that the feed, speeds and cuts specified are being taken, and that the workman is preceeding such a manner that there will be no mistakes made, and therefore no spoiled work. He has to prepare at any time to instruct any workman in methods of machining and to see that they accomplish operation in the time specified on the instruction card. The speed boss has also to investigate and ascertain the causes and reasons why a workman fails to finish his work in the time laid down on the instruction card. He must be prepared, however, to undertake and accomplish the work in the manner and in the time the instruction card calls for, in case the workman claims that it is impossible.[7]

The inspector is responsible for the quality of work, and both the workman and the speed boss must see that all the work is finished to suit him. The inspector will carefully

examine and measure it and ascertain that it is free from defects, planed to size and made according to specifications.[8]

The time and cost clerk is the man who computes from the time cards turned in the planning room by the men performing the various operations of the men. He will ascertain if a bonus has been made or not, providing the shop is a bonus plan of wage payment, and then distributes the cost of the work to the proper accounts of the cost department.[9]

The repair boss is required to keep all the machinery in the shop, including the transmission machinery, in first class condition. He must see that the workmen keep their machines cleaned and well lubricated that belts from the countershafts to machines and from line shafts to the countershafts are kept at the proper tension, so that they can always pull the loads imposed by the speeds and feeds required by the planning department. He is required to take regular inspection and tests of the machines and equipments in the shop so to anticipate breakdown and repairs before the shop or a machine is shut down by the failure of some part. He will keep a record of all repairs and tests, such as those belts, in order that too long an interval may not elapse before that particular piece of apparatus is examined again.[10]

The shop disciplinarian is one who takes all cases of discipline out of the hands of the other functional foremen. All discharges of men are made by him, and in many cases the men are also hired by him.[11]

The jobs of each functional foreman have been so far

outlined. The qualities that make a successful functional foreman are to be considered briefly here.

— The order of work and route clerk, as his job required, must have a knowledge of machine work sufficient to enable him to devise promptly from the drawing the best method of doing a piece of work, for example, whether a surface had better be milled or planed, or whether a cylinder could best be bored in a lathe or a boring mill. He also must be able to read drawing clearly, and must have enough imagination to make a mental picture of the finished work from the drawing. He must have foresight, with a general knowledge of the workings of machine tools, although he needs not to be an expert machinist.[12]

The instruction card man should be an expert in machine work, and should be able to devise methods of doing new jobs which are quick, accurate and economical. He should also have at his command time studies of fundamental operations, such as the length of time required to turn the face of a cylinder, in a given length of time to face a hub of a certain diameter, the time required to plane a flat surface of a given area and so forth. He must be highly skilled in all the devices of his trade and also must possess ingenuity and have some technical ability.[13]

The gang boss boss should have considerable executive ability and should be able to set work in machines to good advantage, although it is not necessary that he be an expert in the manipulation of the machine. He should be painstaking, a hustler and have a mind for detail[14].

The speed boss must be an expert machine operator. He need not, however, necessarily have the other qualities. The inspector should be able to read drawings and possess keen judgment as to the quality of work. He should be of sterling honesty and should be of such force and character that he should be unmoved by forceful protests of workmen and bosses over rejected work.[15]

The time and cost clerk must be an accurate computer and have knowledge of accounting technique. He need, however, necessarily possess ability of a machine operator or an executive.[16]

The repair boss should be a painstaking and neat person. He should possess thorough knowledge of machinery and its construction.[17]

The disciplinarian should be a man understanding when the best results will be accomplished by means of a pleasant manner or when sterness is necessary. He must possess some knowledge of human behavior. He must be a combination of firmness, tact, and good nature, and be a keen judge of men.[18]

In selecting men to be tried as foremen, Taylor had not laid out any elaborate plan. He thought that two different types of men should be chosen, according to the nature of the work to be done. For one class of work, men should be selected who are too good for the job; and the other class of work, men are barely good enough. For the work of routine nature, men whose abilities are barely equal to the work should be chosen, because time and training will fit him for the task. If the

work to be done is of great variety -- particularly if improvements in methods are to be anticipated -- men whose mental calibre and attainments will fit them should be selected.[19]

Taylor stated that many who appear to have all the desired qualities, and talk the best, will turn out utter failures, while on the other hand, some of the most unlikely men rise to the top. He therefore considered that the more attractive qualities of good manners, education, and even special training and skill, which are more apparent on the surface, can not be counted too much. Only grit and constructive imagination are the two qualities which Taylor counted most for the success of a foreman.[20]

Taylor thought the functional men cannot be found but must be made. They must be instructed in their new functions largely, in the beginning at least, by the organizer himself; and this instruction, to be effective, should be mainly in actual doing of the work. Explanation or theory will go a little way, but actual doing is needed to carry conviction. According to Taylor himself the instruction of each foreman requires from three weeks to two months, and in the Bethlehem Steel Company, it took nearly two and one half years to train one speed boss after another in the art of cutting metal on a large motor driven lathe.[21]

1. Thompson, C. B., Scientific Management, p. 5.
2. Ibid, p. 395.
3. Taylor, F. W., Op. Cit., p. 102.
4. Thompson, C. B., Op. Cit., p. 398.
5. Hathaway, H. K., "On the Technique of Manufacturing," The Annals of the American Academy of Political and Social Science, Sept. 1919, pp. 234-237.
6. Ibid, p. 253.
7. Thompson, C. B., Op. Cit., p. 401.
8. Ibid, p. 401.
9. Ibid, p. 402.
10. Hathaway, H. K., Op. Cit., p. 254.
11. Ibid,
12. Ibid.
13. Thompson, C. B., Op. Cit., p. 399.
14. Ibid., p. 400.
15. Ibid, p. 402.
16. Hathaway, H. K., Op. Cit., p. 237.
17. Ibid.
18. Ibid.
19. Taylor, F. W., Op. Cit., p. 141.
20. Ibid, p. 142.
21. Ibid, p. 138.

Chapter V The Foreman of To-day

The all-round line foreman was found in every shop, whether big or small, until about 1900, Taylor made known the system of "functional foremanship". Of course even in the present day, the all-round line foreman is still existing, especially in the smaller plant, while relatively few of the scientifically managed shops employ the full functional foremanship, as outlined by Taylor. Some have never seriously attempted its installation, while others have installed it and later returned in full or in part to the old order.[1]

As Taylor expressed his method of "functional foremanship" only in the term of a shop, there was erroneously created a very deep-rooted conviction in the minds of many individual managers that no workman can ~~under~~ work under two bosses at the same time.[2] Because of this or other reasons, this method of functional foremanship has not been popularly adopted by many industrial plants. But somehow or other, under the impetus of Taylor's conception of scientific management, the present system of foremanship has been worked out like the following.

A mechanical department is created to look out for machine maintenance; a research department, to provide for formulae and standard practice; a cost department, to figure cost; a planning department, to plan and assign the work; a stores department, to control and deliver materials; and a personnel department, to select and train workers.[3]

Under these circumstances, the foreman has found

himself surrounded by a number of specialists. He should plan with experts in the various functional departments. He should schedule work with his subordinates; supervise its execution; and act upon the records of the departments' results. He stands between the management and the men. Aside from securing production, he must properly interpret the management's policies to the men. He must cooperate with the management in the relation of operating expenses and in the elimination of waste. He is concerned with such problems such as safety devices, the filling out of daily records, the training of the new workers and ways and means of getting operators to make suggestions for improvement in production.[4]

Because the foreman's job in the present industrial plant is of such a nature, the Foremanship Training Committee of the Federal Board of Vocational Education has tried to calssify the foreman's job into three different branches according to the manner that the foreman performs his job. The first one is the supervisory job. To fulfil his supervisory responsibility, the foreman is responsible for seeing that work jobs are carried on correctly -- that is for getting the product of these jobs of standard or required quality. The second one is the managerial job. To fulfil his managerial responsibility the foreman is responsible for discharging his supervisory responsibility in such a manner that, while the jobs are correctly carried out, the cost will be made as low as possible. The cost reducing responsibility is a sort of managerial responsibility and any job that is made up of cost-reducing responsibility will be

called a managerial job. The third one is the instruction job. To fill this instructing responsibility, the foreman has to put over to others job knowledge, or train them so that they get job skill; that is, he has to instruct the men. In a word, the foreman's job is not a production job, but a responsibility job.[5]

The methods used in the selection of foreman vary greatly to-day. Old practices such as selection by impression or demonstration are still very popular. Some concerns even employ Dr. Katherine Blackford's system of character analysis to select their men. Others consider the physiognomy as a reliable means in selection of men.[6]

In the recent years, psychologists have been pooling their knowledge and experience in an effort to provide a scientific method in the selection of workers and officials. It has led to the development of many instruments and records to used for selection. By means of rating scales, those intangible qualities, such as leadership, cooperativeness, physical qualities, intelligence, and personal qualities are measured. Qualities as quickness in thinking, accuracy of judgment, clearness of perception and so on are to be measured by the mental alertness test. The foreman's physique is to be measured by the physical examination and strength test. Besides, there is the qualification card used for following up purposes.[7]

Early in American industry the recognition of the need of trained executives and technical experts led to the development of means of supplying this type of training through colleges and technical schools. Soon after 1879, the importance

of training workers began to be increasingly reccognized; and it was met by the Federal Vocational Education Act. Only owing to war emergencies during the last few years, strong interest in foreman training as a means of securing more industrial efficiency has been aroused.[8]

There are four different methods of foreman training in operation: namely,

1. The lecture method
2. The conference method
3. The text-study method
4. Field training of foreman.

Among the four popular methods, the lecture method has had probably the widest use. In this method, paid lecturers are hired to give talks to foremen. The variation of this method is the shop talk by a staff member of the company. The lecture method is usually employed by the company where aim is only to inform foremen without attempting to concentrate upon developing their ability to think their way through the problems of their daily work in accordance with the accepted standards of performance that are set up by the management. Again this method is used where it is the intention of the company to inform the foremen of the interrelationship of various departments of the plants in order that they may have better comprehension of the effect of their work upon those departments and of the dependence of those departments upon the foremen's performances.[9]

Under the socalled conference plan, a foremanship course is set up in term of objectives to be attained rather than

content to be taught, the idea being to develop the thinking of foremen with regard to their responsibilities on the job, rather than to instruct them on new subject matter. The conference meeting is more or less informal in nature and it invites general participation in the discussion. A leader is provided in promoting or provoking thought on the part of the group members. Topics for discussion are usually chosen before. During the past few years a variety of plans have been tried out ranging all the way from one two-hour meeting per week to an intensive program of six hours per day extending over a two-week period. There are two principal methods used by the conference leaders: (1) the case method, and (2) the question method. In using both of these methods for any given topic, analysis and discussion play important parts.[10]

There are two types of text study methods. In the first, the text is developed and presented by the company itself. In the second, the text is prepared and presented by agencies outside the company which specialize in such work and unquestionably well equipped to handle it. In the latter group there is again a subdividion into group study work and correspondence study work. Distinct from the conference plan and the lecture method, the text study method uses a standardized foremen's course for group study. The features of such standardized course are:

1. Specially prepared text material written in plain language and covering only those phases of production management with which the foreman is directly concerned.

2. Interesting problems or projects or exercises, related to the text, which call for written solution, and enable the foreman to think his way through a series of concrete cases.
3. Weekly or biweekly group meeting, at which the text material is reviewed, the problems or projects discussed, and applications of the study to the local plant situation worked out.[11]

A considerable number of companies are now organizeing and carrying on training courses for their foremen entirely on their own responsibility and with the use of the talent already in the organization. The subject matter for courses of this kind consists entirely of the various activities which peculiar to the particular organization. Among the subjects included may be:--

1. The history of the company
2. The organization of the company
3. The various functional departments such as purchasing, sales, laboratory, stores, accounting, maintenance, and so on, with special emphasis upon the relation which exists between the production foremen.
4. Various phases of the company's manufacturing processes.
5. The duties of foreman in relation to employemnt, health and safety work, wage setting, shop discipline, versatility and attendence records, initiating and instructing new worker, etc.[12]

In field training of foremen, the first step, as

practiced by some industrial organizations, is the selection of the men who are to be given special attention. If the employee, under an insignificant trial of those works which may last only a few hours, demonstrates any ability, he is noted as possibility for promotion and is soon given an opportunity to attempt some more task. If he continues to show promise, he is given more specific instruction and assistance and after a number of brief trials he can be considered as suitable material for promotion at some near future date.[13]

When the opportunity arrives,he can be given regular supervisory duties and classed as a minor foreman, at which time his intensive training may begin. The procedure from this point is similar to the preliminary process, except that the training of the candidate is more definitely planned. He is kept at a certain task until he mastered the fundamental requirements. He is then transferred to a position involving radically different duties and the ease with which he adapts himself is noticed. As opportunities occur he is placed first in one part of the works and then in another and, during all this time, he is being guided and stimulated by those who are watching him. In this way the man broadens his acquaintances among the work executives who might be able to use him permanently and he also acquire a good knowledge of the various phases of the business.[14]

1. Hoxie, R. F., Scientific Management and Labor, p. 31.
2. Lansburgh, R. H., Industrial Administration, p. 62.
3. Tead and Metcalf, Personnel Administration, p. 165.
4. Ibid.
5. Federal Board for Vocational Education, Foreman Training Course, Bul. 36, Trade and Industrial Series No. 7, p. 59.
6. U. S. Department of Labor Bureau of Labor Statistics, Bul. 227, Oct. 1917, p. 114.
7. Scott and Clothier, Personnel Management, Chapters 12, 13 14, and 16.
8. Federal Board for Vocational Education, Bul. 36, Series 7, pp. 52-53.
9. National Personnel Association, Foreman Training Methods, pp. 5-6.
10. Ibid, pp. 9-14.
11. Ibid, pp. 16-19.
12. Ibid, p. 21.
13. Ibid, p. 23.
14. Ibid, p. 24.

Chapter VI The Foreman of To-morrow -- His Duties

In the last few chapters, foremen of various types have been discussed. As a matter of fact, the title of "foreman" while in majority of industries, is not in universal use, neither does it carry equal responsibilities. For the present consideration and also for that in the subsequent chapters of this paper a foreman will be defined as an individual of either sex regardless of title who represents the connecting link between the management and the men; that is, the minor executive who is next in line to the working force. Such titles as supervisor, general foreman, foreman, forelady, assistant foreman, leading man, gang boss, gang leader, boss, overseer, second-hand and so forth may be included in the definition.[1] Also to make the discussion concrete and intelligent, the responsibilities of the foreman are to be grouped into the following manner and explained accordingly:

1. The responsibilities of the foreman of the large company
2. The responsibilities of the foreman of the medium sized company
3. The responsibilities of the foreman of the small company.

The responsibilities of the foremen of the different sized companies are unlike. This is due to the fact that the internal organization and functionalization of each individual company are relatively different in accordance with its own size regardless of what kind of industry it is.

In a paper of this nature, the duties and responsibilities of a foreman can only be discussed in general terms even

that they are grouped in the above manner. As to the exact work that an individual foreman has to perform and the definite routine that he has to follow, one industry differs from another industry, and one plant differs from another plant regardless whether it is of the same size or not. But some how or other, the duties and responsibilities of a foreman can be deduced into three main divisions; namely, the individual responsible activities, the jointly responsible activities and the incidental activities.[2]

By the individual responsible activities it is meant those specially assigned activities that each individual foreman is required to perform. Those activities are under his jurisdiction and he is employed and paid to discharge them. Those activities are clearly and concisely defined and when an individual foreman is assigned to those activities, he is held responsible for their success or failure by his superiors. As the jointly responsible activities are concerned, a foreman is expected to co-operate with his fellow foremen and also the various functional departments in the company in every possible way so that work of the other foremen as well as that of those functional departments can be as profitable to the whole company as possible. In a word, the performance of the jointly responsible activities by a foreman is not particularly for the good of his department but for the good of the entire company. By the incidental activities it is meant those activities which may not occur every day in the foreman's daily routine but they happen incidentally. They are incidental only in the sense of their

occurence, They are activities bound to come but they cannot be scheduled definitely as to where and when. Yet they are very important to the company's progress and general good.

In a large company, there are a number of functional departments in which many specialists are employed to look after those functions such as to maintain service equipment and building, to maintain labor supply, to train under-studies, to plan and schedule daily routine, to supervise raw material and maintain stock and so on. Thus, the individual responsible activities of a foreman in a large company are fundamentally instructional in nature.[3] The following individual activities constitute the so-called instructional foremanship. In the first place, the foreman should have a thorough understanding of the technique of the processes under his direction or his instructional foremanship. Although it is the function of the methods or research department to develop best methods of manufacturing the desired goods, the foreman is charged with the responsibility to see to it that the workers are following the directions of the methods or research department properly. He has to see, for instance, that the piece is machined in the way laid out by the methods department. He has to see that the tools are set correctly, that the feed, the speeds and cuts specified in such a manner that there will be no mistakes made and therefore no spoiled work.[4.]

The foreman is in contact with men during their entire working day. It is he to whom they are accustomed to look for instruction, for guidance, for sympathy, or for reproof. He en-

joys that matchless supremacy which comes or should come with authority to command. With this opportunity, the foreman can be a powerful factor in creating an atmosphere of sanity and good citizenship which will go far toward offsetting the destructive doctrines with which the worker is assailed on every side. There fore to develop morale among his men in the shop is one of the things for which the foreman is paid. Bad morale is the cause of low production, high labor turnover and many other troubles. It is up to the foreman to prevent them by developing a sound morale.[5]

In the large company, there is usually a separate training department whose duty it is to teach new men their jobs. In this way a good training department can relieve the foreman of a great deal of responsibility. But even with a training department taking the rough edge off of the green men, the foreman still has a certain amount of instructing to do. That is to say, he should still know how to teach new ideas to his men.[6]

It is a foreman's job to keep the quality up although there is an inspection department which checks the result. It is because that no one else is in as good a position as the foreman supervises the men as they work, and sees things that are not properly done, he ought to correct them at once. He should not let poor work slip by for the inspectors to catch.[7]

The most important function that a foreman is hired to perform in a large company is to interpret plans and policies of the management to men. Men in the shops look to their foreman as representative of the management. To them he is a part

of the management. He carries out the company's plans and policies. He gets the management's ideas directly through his supreintendent and is responsible for passing them to his men. He should enforce them as exactly and perfectly as possible.[8]

Besides these individual responsible activities, the foreman of a large company has a number of jointly responsible activities. To co-operate with the maintenance department to maintain service equipments and buildings; with standards and methods department and inspection department to supervise materiais in process; with the training department to put ideas "across" to the green men, and so on are many of the foreman's jointly responsible activities. Not only should each foreman co-operate with those functional departments alone, but should he also co-operate with his fellow foremen in these activities. In such a manner, a foreman can well perform his jointly responsible activities.[9]

The incidental activities of a foreman in the large company are too many to be mentioned one by one. The most usual ones may be named for example such as to attend foremen's Conference, to serve on plant committees, to aid in approved welfare activities, to conduct visitors, to maintain personal health and vigor, to study for advancement and so on.[10] A good foreman should not overlook those incidental activities if he is to be of great value and help to the company.

In a medium sized cpmpany, because of the internal organization being comparatively small in scope, the foreman will have more work to do in the field of his individual responsible activities. Besides those individual responsible activities

which have to be performed by the foreman in a large company, the foreman of a medium sized company has to assist in analysis of the details of production problems preparatory to routine and scheduling. His clese acquaintance [illegible] ~~which~~ makes him capable of offering many useful suggestions and estimates. His most important function , however, lies in the prompt carrying out of the plans and schedules that are made. When the jobs are despatched, it is up to him to push them through on schedule time. In addition to carrying out the plans laid down for him by the planning department, the foreman must do a great deal of planning for himself. He has many daily tasks for which he is entirely responsible. He must lay out his own time schedule so that he makes no false motion.[11]

The foreman of medium sized company must not only be a shop executive, he must be an instructor as well, as in most cases, a medium sized company does not provide a training department. As an instructor, he must not only understand the jobs of his department thoroughly, but he must know how to teach those jobs to new men. He must therefore know how to put ideas "across" to some one else. A foreman may know how to do a thing perfectly himself and yet he is a poor foreman because he does not know how to teach others to do it. The foreman who is able to teach and train his new men how to do their work most efficiently will be mush more valuable to a medium sized company than a foreman cannot teach his men "the one best way" to do their work.[12]

In a small company, the individual organization is of course very much limited in scope. Usually it does not provide those functional units such as, standards and methods department, maintenance department, safety department, training department,

inspection department and the like. Most of the activities which are performed by the functional departments in a large company or a medium sized company are to be done by the foreman in a small company. Therefore many jointly responsible activities of the foreman in a large company or a medium sized company become individual responsible activities of the foreman in small company. Because of this fact, the foreman found in small company is usually an all round man because his various duties call for it.

1. Chamber of Commerce of the United States, Washington D. C., Foremanship, p. 5.
2. La Salle Extension University, The Foreman and His Job, pp.2-4
3. H. S. Person, Lecture notes on Industrial Management.
4. Cowdrick, E. S., Manpower in Industry, pp. 164-165.
5. Gardiner, G. L., Practical Foremanship, pp. 51.
6. Ibid, p. 97, p. 101, p. 106.
7. Ibid, p. 27.
8. Ibid, p. 51.
9. La Salle Extension University, Op. Cit., pp. 9-10.
10. Ibid.
11. Gardiner, G. L., Op. Cit., p. 129.
12. Ibid, p. 51.

Chapter VII The Foreman of To-morrow -- His Selection

With the previous outline of foreman's duties and responsibilities in mind, the necessary qualities for his success seems proper to be considered here. No man can be expected to accomplish any thing unless he does possess a strong physical foundation. Physical qualities are of great importance to the success of a foreman. To make the meaning definite, physical qualities of a foreman include four things: vitality, health, voice and appearance. No foreman can be energetic and durable unless he possesses vitality. A foreman must have a good health so that he can be expected to be regular and prompt to his work. If he has ~~a~~ good health, he will be free from sickness, a good insurance risk, and always keep in good trim. A foreman must possess a voice which he can keep under control, because he finds many uses of it. Also his voice must be firm and carry power. A foreman must be inspiring. A desirable appearance is of much help.

A foreman must know his job and should possess a number of knowledge qualities. He should know how to handle men according to the principles and modern practices. He should acquaint himself with ~~with~~ the problems involved in job analysis, flow of work, and proper working conditions. He should understand the general principle and practice of planning, scheduling, stockkeeping, cost control and the principle of industrial organization of the plant. He should understand the business fundamentals that govern production, wages, and incentives to workers. He should be familiar with the various ways in

which industrial services may be rendered to employees.[1]

The foreman is an executive in his department. He should possess a number of fine executive qualities in order that he may be successful. A successful foreman is teachable, progressive and alert for new ideas. Thus, he must possess the qualities of openmindedness. He is usually expected to study a problem and get at its fundamental facts and causes. To accomplish this, he must possess certain analytical power. To observe and observe exactly and closely what is going on in his department and in the plant at alrge, he requires a keen power of observation. To be able to lay out the factors of production, he must possess an organizing ability. He should possess initiative, and must be able to think on his own account and act without delay. Without it, neither he, his work, nor his men can progress. Responsibility that inspires confidence and trust is a most essential attribute of good foremanship. Loyalty to both the company and the work is essential. He should keep in step with the policies of the company. Coopera tion is another quality paramount to a foreman. Only with that quality he can utilize all his other fine qualities. He must cooperate fully with those who work with him.[2]

Promoted from the ranks, he may lose the respect of his former fellow employees and open an irreparable breach if at all careless or "swellheaded" in the exercise of his newly assumed authority. He may fail as a foreman through not understanding the principles of leadership and possessing certain leadership qualities. A foreman must have the ability to ins-

pire his men so that he can get those under him to desire to do what he wishes. He must have the ability to teach his men and express himself clearly and concisely. Favoritism and personal prejudice have no place in modern business. The foreman should be governed at all time by the spirit of justice. No man can expect to influence and govern the actions of others if he has no self-control. A foreman must be patient and able to control his temper. By the exercise of tact, that is, the use of authority tempered with diplomacy, a foreman should possess an amount of forcefulness so that he can issue instructions or orders effectively. He must also possess poise so that he can be well balanced in his mind and manner.[3]

Last of all the foreman must possess certain trade and technical qualities. He should have constructive ability that will help him to build models, pattern, designs, tools, equipment and the like, when required. With a quality of inventiveness, he may be able to devise better tools, equipment and processes. The foreman must run the machines and perform the various skilled processes in his department. In order to meet an emergency or a permanent limitation in his department, the foreman has to possess an amount of mechanical resourcefulness so that he will be able to adapt tools, equipment and processes to his particular need. He must therefore have a thorough knowledge of the machines, tools, materials and processes of his department.[4]

To summarize the foregoing discussion, the foreman in general must possess different qualities under the five main

groups. They are:

1. Physical qualities
2. Knowledge qualities
3. Executive qualities
4. Leadership qualities
5. Trade and technical qualities.

In the last chapter, the foreman's duties and responsibilities have been discussed and grouped. In this chapter, the foreman's necessary qualities have been examined and classified. The next step will naturally become that of how to select the foreman either from outside or from within of the plant. The old method of selection as described in the early part of this theme is certainly inadquate and unscientific, It can no longer be used. With the recent development of the science of personnel management and the application of psychology in the field of business and industry, methods of judging, sizing up, selection and influencing men are becoming more and more practicable and available. They tend to approach the standards of objective accuracy. Instead of depending upon the rule of thumb, the modern methods are built on the basis of inductive reasoning. Instead of predominance of bias and prejudice, they are the work of objective analysis.

The foreman may come from two main sources. The first is the business world outside of the walls of the plant. The second is the personnel already within the plant. The second is naturally the source from which the foremen are drawn most. It means promotion of men from rank and file positions to authori

ty. It may also mean transfer of men from one ~~development~~ department to another.

Whatever source a man comes from, it is essential to set up standards and develop methods of selecting those persons who are to be placed at these positions. Selection has much to do with the employment of men, it is true, but it has to do equally with the transfer and promotion of men already in the plant. It has to do with the choice of men to receive specific instruction and training along certain lines of work.

Instruments employed in selection are numerous. They include interviews, references, various tests, examinations, ratings, and many other devices. Each instrument is used for certain purposes and one result will check against the other as to provide enough facts to form intelligent judgment. As a matter of fact, selection cannot be well done unless the facts are in hand as to the capacities and interests of the persons themselves who are being considered and as to the opportunities of the positions through out the organization. Such facts can only be rendered available through the construction and efficient use of proper instruments for personnel control.

To know the capacities and interests of the candidates and those who are being considered for training, transfer and promotion, the following instruments are of much usefulness. They are tests for special ability, tests for mental alertness, physical examinations and evaluation of personal qualities. It is true, that in the determination of physical and mental

capacities, the above mentioned tests are effective only under certain conditions. It is quite impossible, nevertheless, to lay down any general rules. They can not be proved of value in every case and they can not be applied by every concern. For the present, these tests are recommended for the selection of foremen only from the standpoint of their relative availability and reliability. Because of lack of more scientific instruments at the moment, they will be considered satisfactory for the purpose of selection.

The special ability test is an instrument for discovering present ability or present knowledge, ability or knowledge already acquired. The construction of such tests must be carried out along the lines of scientific procedure. The results of the tests should be weighed together with all other available facts derived from other sources. When used thus to check other evidences of ability, they assist us to judge more accurately in adjusting foremen to their work. Special ability tests cover a variety of fields. Physical tests are used to test for physical qualities of the foremen. Manual dexterity tests are employed in testing such qualities of " quick" and "fine" work. Knowledge of trade and knowledge of operation tests are used to determine the candidates' knowledge qualities of the trade and the operation, or about a commodity they are inspecting or handling. Trade tests are used for determining the candidates' present proficiency in a given line of work. They are designated for testing the trade and technical qualities of the candidates.[5]

Mental alertness tests are used in selection for the purpose of determining that those applicants are selected because they stand high in mental alertness tests should succeed better than those applicants who stand less high in the tests. The value of the mental alertness tests is to help to predict at the time of employment the probable future value of accepted applicants for the designated job. That the use of the mental tests, although only a partial measurement, is the quickest, most accurate and economical method of prophesying future success and advance of candidates. Mental alertness is only one of a number of important qualities that contribute to one's success. The mental alertness tests are not and could not be designed to measure such other qualities as ambition, energy, initiative and so on. The mental alertness tests indicate the single quality of mental alertness but by no means such a rating must be comsidered to be an absolute index even of mental alertness.[6]

Physical examinations are another means of selection. They are to reveal the physical fitness of the candidates. It is obvious, however, that physical qualifications have much to do with the person's ability to work in a certain environment and with his success in certain type of work. It is a costly process for the company to assign a job to a person who is mentally qualified for it but who lacks those physical characteristics of health and strength which are essential to his continued performance. It is equally costly to the employee to be assigned to work for which he may be readily assigned to other

work for which he is rightly qualified in every way. The examination varies somewhat from company to company. Special emphasis may be laid upon certain physical quality that has much to do with the prospective job.[7]

Certain capacities can be measured by tests, such as physical qualities, knowledge qualities, and trade and technical qualities. But there are certain qualities, which probably will never be measurable in the way so far described. They cannot be evaluated in pounds or inches or quarts. They are abstruct, yet they are important and exercise a profound influence upon the candidates' effectiveness in their work. Executive qualities and leadership qualities are of this sort. Now in such qualities as these, men have always judged each other. But there are many difficulties in reaching reliable and conclusive judgments. It is naturally difficult to think of abstract qualities in concrete terms. Prejudice often plays a part; everyone is influenced unconsiously by his likes and dislikes. Also one judge does not think in the same terms as another. Therefore, the need for a practical rating scale to overcome these difficulties has been recognized in industry and business.

"Considerable research work has been devoted to the development of a rating scale for industrial use which would combine accuracy in results with ease in operation. The research has led to the development of the Graphic Rating Scale. On the graphic rating scale, the executive can indicate his judgment of the candidate in each important quality by entering

a check mark at the proper point on a horizontal line, one end of which represents the maximum degree in which any one can possess that quality, the other the minimum degree in which any one can possess that quality. The intermediate steps are indicated by words and phrases, pertaining specifically to the quality itself. The scales are then scored by stencil and the score, after statistical treatment to allow for individual rating tendencies, are entered on proper data cards of the candidates."[8]

The scale has many advantages besides being easy to use for selection. "It is educational in effect because it enables the candidates to make intelligent, self-analysis." "It helps make uniform the standards by which different executive judge their subordinates." "It helps the executive to base his judgment of the subordinate not upon some recent outstanding instances of good or poor performances, but upon the character of his performance day-in and day-out." " Also it brings to the attention of the management the qualities possessed by the individual subordinate officers and the degree in which each is improving periodically his standing in those qualities." "It helps make it possible for management to identify these subordinates whose inadequacy of performance in their present work may point out the advisability of transferring them to other work where they will be more valuable to the company."[9]

So far the various devices that can be used in measuring the capacities and qualities of the foreman have been discussed. But without a means to coordinate the results obtained

from these tests, the selection can never be made available. Thus, it is essential to construct a qualification card to record the findings from those tests. The qualification card will not only be used to record the foreman's capacities but many other things that have to do with his selection, training, advance, transfer and so on. It offers a condensation of the important facts pertaining to the capacities and interests of each individual foreman. It furnishes the information of each foreman's duty and responsibility, his selection and training.

Of course there is no one best way of constructing the qualification card. It depends much upon the nature of the industry and the problems and conditions prevailing in the concern itself. Generally speaking, the following should be provided:

I. Personal Information
    A. Individual's name, address, photograph, occupation, occupation symbol, department symbol, etc.
    B. His marriage status, number and kinds of dependents, housing conditions, nationality, citizenship, etc.
II. Physical Qualifications
    A. Height, weight, physique.
    B. Vitality
    C. Health
    D. Voice
    E. Appearance
III. Education Qualifications
    A. Scholostic attainment

B. Special trainings

C. Linguistic ability

IV. Knowledge Qualifications

A. Business fundamentals

B. Industrial relations

C. Handling men

D. Handling job

E. Planning production

V. Trade and Technical Qualifications

A. Constructive ability

B. Inventiveness

C. Manipulative skill

D. Mechanical resourcefulness

VI. Mental Qualifications

A. Mental alertness as revealed through objective measurement, by the use of mental alertness tests and so forth.

VII. Special Qualifications

A. Executive qualities

1. Openmindedness
2. Analytical power
3. Observation
4. Organizing ability
5. Initiative
6. Responsibility
7. Thoroughness
8. Loyalty

        9. Cooperation
    B. Leadership qualities
        1. Ability to inspire
        2. Ability to teach
        3. Justice
        4. Self-control
        5. Tact
        6. Forcefulness
        7. Poise
        8. Setting an example
        9. Discipline

VIII. Social Data and Plant Activities
    A. Hobbies
    B. Civic Activities
    C. Athletic proclivities
    D. Membership
    E. Social relationship between the foreman and his associations

IX. Previous Experience
    A. Name of employers
    B. Name of occupation
    C. Length of service in each place
    D. Reason for leaving

X. Progressive History in the Company
    A. When employed
    B. Where come from
    C. Reference

D. Position held since
  1. Date
  2. Earnings
  3. Reason for transfer and promotion
E. Regualrity and promptness
F. Record of accidents
G. Suggestions
H. Complaints

XI. Desires and Reason for them:
A. Education
B. Training
C. Name of work preferred
D. Transfer

So much for the data that should be provided on the qualification card. It is necessary to add a few words about the method of getting the information required. Items I, III, VIII, IX, X, and XI on the qualification card can be obtained from application card, interviews or questionnaire. Item II can be obtained from the physical and medical examination reports. Items V and VI can be derived from the findings of the trade test, metal alertness test, while items IV and VII from those of the rating scales. Certain historical data from the foreman can not be obtained by means of mechanical methods, and personal interviews must be used. It is because the mechanical methods lack personal touch and easily create misunderstanding. It is far easier to create the proper atmosphere of confidence and friendliness when the interviewer and the person

being interviewed meet in privacy for the purpose.

1. La Salle Extension University, The Foreman and His Job, pp. 13-20
2. Porosky, M., Practical Factory Administration, pp. 139-140.
3. Gardiner, G. L., Practical Foremanship, pp. 4-5.
4. Porosky, M., Loc. Cit.
6. Scott and Clothier, Personnel Management, pp. 197-201, 208, 221.
7. Ibid, pp. 234-236.
8. Ibid, p. 209.
9. Ibid.

Chapter VIII The Foreman of Tomorrow --- His Training

In the preceding two chapters, duties and responsibilities and the methods of selection of the foreman of tomorrow have been discussed. The present chapter will therefore consider the methods of the training of the foreman of tomorrow in term of "how" and "in what way". In the first part of the discussion, emphasis will be laid on the preliminary considerations of the methods of training and in the second part, different available methods of training will be studied and their merits and demerits will be compared. Anyway it should be borne in mind that there is On/such thing as "cure-all". Certain methods are only good in certain places and can answer only certain needs. Painstaking analysis and proper modifications are always necessary in order to make certain methods to be adaptable to certain conditions and so to yield maximum effectiveness.

Foreman training is just as expensive a proposition as extension of plant building, purchasing of new machines, or conducting a research work. It is an investment. Yet whether it be a remunerative one or otherwise, it depends upon the company's purposes in installing such a plan and the actual practices of it. Without any purpose, nothing can be accomplished successfully. To establish a plan of foreman training, the company must set up a definite purpose. Different companies have different problems to attack and so their purposes of foreman training must also differ. Consequently unlike plans will be used. The purpose of foreman training may be summarized in five general

headings:

1. To establish the habit of creative and constructive thinking.
2. To enable the foreman to interpret more intelligently and to execute more successfully the company's policy..
3. To increase the foreman's confidence which will enable him to handle his subordinates more effectively.
4. To bring about a greater degree of cooperation and team work between all the foremen of the various departments of an organization.
5. To enable the foreman to better grasp the importance of his work, a realization of the opportunities within his present position, and to create a better esprit de corps among the foremen.[1]

After a definite purpose of foreman training is set up, the company has ~~d~~ to decide the source of instruction. There are a number of sources of instruction which a company can make use of. The selection of the sources of instruction all depends upon what the individual company's purpose is. A number of large companies have prepared to lay out and conduct their own foreman training without outside assistance. Usually in such cases, either a specialist is employed or some one within the organization is designated to formulate and direct the work. In either case, much depends upon the man selected --- his practical background and ability to obtain and hold the confidence of the foremen. Under the guidance of this executive the details are planned and the proposition is "sold" not only to the foremen, but sometimes

it is even necessary to convince some of the higher executives of the practical value of such activity. The material for the course is gathered from various sources and a considerable amount usually has direct reference to the company and its activities. It is therefore unsuitable for other organizations.

A great many Y. M. C. A's having educational department, especially those in large cities, conduct foreman training at cost. They conduct the training for groups made up of foremen from various industries, and in many instances carry on the training in the plant if there is a sufficient number of enrollments to justify a separating group. The instructional committee of Young Men's Christian Association, N. Y. has prepared a standard course consisting of four text books; namely, (1) the Foreman and His Job, (2) Materials and Their Handling, (3) Equipment and Machinery, and (4) Organization and Management. These texts are of general nature and of course cannot answer the sepecific purpose of a particular industrial establishment.[2]

Many private institutions have also given standard courses in foremanship training. Most of the materials covered by those standard courses can be grouped into five subjects:

1. Managing Men
2. Handling Jobs
3. Planning and Production
4. The Foreman as a Business Man
5. The Foreman and Industrial Relations

Another is based upon six text books consisting of:--

1. Team Leadership
2. Handling Men
3. Organization
4. Handling Equipment
5. The Production Records
6. Principles of Management

There are several institutions which furnish a letter service, in cooperation with management, to be sent to the foremen at regular intervals. Each letter is intended to tell a story, and discussion meetings are frequently held.[3]

In many of the States specialists in industrial education and foreman-ship are available for direct foreman training, and in others only for foreman teacher-training. The latter is the training of foremen and others by the specialists to become leaders and instructors of foreman classes and groups. Direct foreman training by the Federal Board for Vocational Education is conducted by the conference plan and is characterized by the entire absence of lectures. A definite subject for discussion is selected for each conference, and the series of conference subjects constituted a coordinated and progressive program. A representative typical program as used by a representative of the Federal Board for Vocational Education is:--

1. The Foreman's Job
2. Consideration of the Foreman's Responsibilities
3. Orders -- Directions -- Suggestions
4. Continuation of tppic -- Orders, leadership
5. Middle Ground

6. Effects of Good Leadership
7. Effect of Good Leadership -- continued, Interest Factors
8. Interest Factors -- continued, Cooperation
9. Dissatisfaction, Breaking in Green Help

While the program in the various states where direct foreman training is available may very to some extent -- depending upon local conditions -- the above topics are typical and the general plans of operation are necessarily similar to that recommended and used by the Federal Board for Vocational Education.[4]

A few of the States through University Extension departements, usually under the State Universities, offer instruction in foremanship either by class or by correspondence. Typical topicas are:--

1. Handling Men
2. Industrial Goodwill
3. Employment Management
4. Selecting Men for Jobs
5. Planning Industrial Activities
6. Keeping the Quality High
7. Breaking in the New Men
8. A Safe Place to Work
9. Wage Problems
10. Advantages of Increased Production and so on.[5]

Many manufacturers associations, chamber of commerce and organization of the like nature also have conducted foreman training courses. The content of the course is usually very general. Of course there are many topics included in the course

which apply equally well to a foreman in a machine shop, in a cotton mill, or in a rubber factory. It requires a little more skill in the part of the leader to make the foreman see that many principles are the self-same principles in any industry, and at the same time maintain interest and enthusiasm.[6]

Whether the instruction is provided from outside or inside of the organization, it does not make any difference. But the course to be given must be based on a determination of actual needs. Probably in no two communities are the needs for foreman training the same, especially it is true of plants of different industries. In one case the need may be for the supervisory phases of the foremen's work; in another case, for training effective methods of handling men or controlling cost; still in another, for additional training on a trade extension basis. Unless the particular need is known, a course cannot be planned to meet the need.

Two possible sources of information -- executives and foremen -- are essential in determining local needs of the foreman training course. As the "man higher up", the executive sees the general fields, where, in his organization, courses should be of value. As the "men on the firing line", most foremen are aware of their own detail difficulties. A course worked out from information obtained from either side alone is like to be more or less "lopsided",

It should therefore have some especially qualified to study the needs sometime in advance of the time fixed for the opening of the course and determine the content of the course

from the information which he obtains from the two sources. To do this effectively, it is highly advisable that the person who is in charge of the traing course should know the general organization and procedure of industrial plants and that he should possess also some instructing ability. The study of the type of courses required may focus on six general phases of the foreman's work. They are:--

1. Courses dealing with supervision
2. Courses dealing with management
3. Courses dealing with training of help
4. Courses dealing with the necessary technical knowledge
5. Courses offering training in necessary manual skill.

As stated above, plan for foreman training is an expensive thing. The problem of how to distribute the cost for doing it is an important one. A plan for foreman training will certainly cost the company a lot. But when the plan is successfully conducted, all kinds of savings, economies in time and material, actual imporvements in methods and operation and reduced rate of labor turnover -- as a result of the training -- will certainly pay the company for undergoing the trouble. Therefore, the company should consider the expenses so incurred as a paying investment rather than an ordinary operating expense. Some company has adopted a cooperative plan to share the expenses equally with the foremen. Some agrees if the foremen complete the course satisfactorily and evidence themselves by winning each a cetificate, it will refund them the amount of thier payments. This adds an extra incentive to good work and has produced

admirable results. Of course these two plans cited can well be applied in the case that instruction is conducted outside of the organization, such as Y. M. C. A!s courses, private institution's courses and the like.[7] Where the company conducts its own foreman training it is advisable for the company to pay everything. Company pays therefore requires attendence, especially of those who most need instruction. Also the company can arrange a most suitable time for meeting and check the attendence.

Many factors that have intimate relation with the methods of foremen training have been so far considered. The next step will consider the methods proper. There are several methods available. But just because one method has worked out successfully in one plant does not mean that it will be equally successful in another plant, be it large or small. However, there are certain broad principles which must be observed, and the experience in one industry may with a certain amount of ingenuity and study be applied for local specific needs. The purpose to be achieved, too, will determine to a great extent the method to be followed.

Although there are numerous variations of the plans, the entire group seems to boil down at least six principal methods. They are:--

1. The Disconnected Lecture Plan
2. The Coordinated Lecture Plan
3. The Lecture Discussion Plan
4. The Conference Plan
5. The Text Study Plan

6. The Letter Conference Plan

The first two and the fifth one are essentially instruction methods. The third and the fourth one are to develop the foremen's thinking ability and also to exchange their viewpoints. The last one is informing in nature and at the same time it stimulates some reaction of the foremen.

The disconnected lecture plan usually consists of a series of lectures given either weekly or bi-weekly. Experts in their respective fields address the assembled foremen, and these speakers may come either from the company or from the outside. One may be on "shop costs" and the next one on "sound industrial relations" -- there being no sequence and continuity. The coordinated lecture plan presents a progressive program of related topics. Under the disconnected lecture plan, the selection of speakers determines the subjects, while under the connected plan subjects determine who the speaker shall be. These two plans have been widely employed because of the following reasons:

1. They are, perhaps, the easiest to promote and to operate.
2. They are,usually the most economical and adoptable to large groups.
3. They are commonly accepted methods of education and effective to impart information.
4. They are effective where the aim of the work is inspirational rather than instructive.
5. They have a pronounced value when used to supplement other methods.

On the other hand, there are several reasons against these two plans:--

1. They are the least effective of all methods in the stimulatinn of the thinking process, and produce only temprary interest at best.
2. They are not well adapted to the type of men commonly found among the foremen and it may very easily add to the foreman's complexities either through the limitations of his own capacity or the inability of the lecturer to come down to his level.
3. There is usually a low degree of correlation between theory and practice as they are devices for information, but not for training.[8]

The above reasons, either pro or con will serve to indicate some of the limitations and the applicabilities of the two lecture plans. It is unquestionably true that the two lecture plans are possible of application and in many cases they are very desirably used in the work of improving foremanship. They have their most effective use where the previous training mental equipment of the foremen of the group is sufficient to enable them to absorb the content of the lecture. Again, the greatest effectiveness of these two plans comes where the aim is only to inform foremen without attempting to concentrate upon developing their ability to think their way through the problems of their daily work in accordance with the accepted standards of performance that are set up by the management.

The two plans can be advantageously applied under t the following conditions:--

1. Where it is the aim of the company to inform their foremen of company policies without necessarily training them to think through to the application of those policies in the performance of their daily work.
2. Where it is the intention of the company to inform their foremen of the interrelationship of the various departments of the plant in order that they may have better comprehension of the effect of their work upon those departments and the dependence of those departments upon the foremen's performances.
3. Where the groups are large, involving from fifty to one hundred or more foremen from varied types of work.

It is therefore unsafe to say that these two lecture methods are not adaptable to improve foremen. Their applications are effective under certain operating conditions. Their successful use depends, however, upon three things; namely,

1. The aim of the development
2. The character of the group to be dealt with
3. The condition under which the development must operated.

The lecture discussion plan is a combination of lectures and discussions. Under this plan the lecture is given upon a given subject followed by discussion of the lecture by the group. It usually calls for a twenty or thirty minutes talk on the topic by the lecturer. He generally makes a deliberate attemp to raise as many questions on the topic as possible in the

minds of the foremen for later discussion. The latter part of the meeting is then turned into a discussion period. The success or failure of the plan depends much upon the ability of the speaker to raise questions. While this plan may be an improvement over the straight lecture type of work, the question is raised as to whether greater returns in the organization may not be expected from the converse of this method, in which after discussing a number of particular cases centered upon a given problem, the group reaches a general conclusion which they may apply in future instances of the type.[9]

The conference plan of foremanship training is set up in terms of objectives to be obtained rather than content to be taught. It is essentially a developing and organizing procedure. The idea is to develop the thinking of the foremen with regard to their responsibility on the job, rather than to instruct them on new subject matter. There are four important things that characterize this plan. In the first place, the members of the conference group must have the necessary background of industrial experience. Secondly, the relationship of instructor and learner, or teacher and pupil, is neither set up nor implied. Thirdly, the sixe of the group must be limited -- not more than twenty. Lastly, a well qualfied leader is necessary.[10]

The success of this plan depends to a very great extent upon the make-up of the group. Only men of about equal rank from the same organization should be included in one group in order to secure the highest efficiency. The presence of high executives of the organization usually tends to reduce the amount

of full and free discussion of cases because the men do not feel perfectly at ease. The leader of the conference should be a man of training, experience and character. His success will depend upon the degree to which he can function as a teacher without having members of his group look upon him as an instructor or teacher. Even though the conference usually deals with matters already known to the foremen, yet the leader may still introduce new things which can improve the foremen's procedure in handling their men or in performing any of their duties. In this case, he certainly functioned as teacher, although he may not assume that attitude.

In handling the conference plan, two methods may be used: (1) the case method, and (2) the question method. In following the case method, a case is the starting point for analysis and discussion. The cases introduced may be real or assumed ones but they should be practical and have reference with the existing condition in the organization. In following the question method, a series of questions of a thought provoking character is used. These questions, or points for discussion, quite often are intentionally made somewhat ambiguous in order to encourage a difference of opinion on the part of different members of the group.[11]

The conference plan not unlike any other plans is subjected to opinions pro and con. Reasons advanced in favor of this plan may be summarized into the following points:--

1. It is informal in nature and every member has a chance to participate in discussion.

2. It encourages self-analysis as well as analysis of individual diffifulties; thus it provides indiwidual foreman with a technique of procedure for getting to the bottom of their different difficuties and so it helps the foreman toward solution of his daily problems.
3. It assures a training course of great flexibility.

On the other hand, the limitations of the plan may also be mentioned in the following points:--

1. The discussion may get nowhere, but wander afield.
2. Purely personal remarks, so disruptive to progressive measure, sometimes creep in.
3. A competent leader is usually hard to secure; in-competent leaders just spoil the plan.

However what the criticism may be, when the plan is employed, the following underlying principles must be borne in mind in order to obtain success:--

1. The meetings should be more or less informal in nature without marked degree of stiffness.
2. The leader should be well chosen and he must be more or less skilful in provoking or promoting thought on the part of the group members.
3. The topics must be carefully chosen and carefully defined.
4. The leader must use terms which are free from amoiguity.
5. Care must be exercised by the leader that the discussion leads somewhere each time.

The text study method has two procedures for handling the work of foreman training. In the first ~~place~~, the text is

prepared and presented by the company itself, and in the second, the text is prepared and presented by agencies outside of the of the company which specialize in such work and are unquestionably well equipped to handle it. In the laater group there is again subdivided into group study work and correspondence study work. The group study work is an extensive type of instruction, while the correspondence study is a more intensive type of instruction.

When the text is developed and presented by the company itself, the subject matter consists entirely of the various activities which are peculiar to the particular organization. Among the subjects included may be:--

1. The history of the company
2. The organization of the company
3. The various functional departments such as production, sales, engineering, accounting, personnel, maintenance, methods, and so on, with special emphasis upon the relation which exists between the production foremen and the various functional departments.
4. Various phases of the company's manufacturing process
5. The duties of foremen in relation to employment, health, safety work, wages and wage setting, shop discipline, industrial representation plan and so forth.[12]

When the company's object of training is making articulate to the foremen the details of its own policy on management, a text prepared in the above manner is very desirable. It does this on the assumption that a foreman, who is to be successful to a

particular company must be trained in the policies which are peculiar to that company.

In preparing the text, one individual in the company should be responsible to outline the details of what is going to be covered in the course. He then collects information directly from those executives and experts in the company who are in the best position to give it and who are primarily concerned in carry out the company's policy in that particular field, to make up the subject matter of each course. The text material, when well done, is distributed to the foremen a few days in advance of their meeting. The meeting itself may be led by the man in charge of the course or by a department executive whose [illegible] has connection with that particular text materials. Of course the meeting should not be conducted like a school class, free discussion of text material may be followed at the end of each meeting. The advantage of this method is very obvious. The text material presented is entirely based upon the policies and practices of the company. It will accuint the foremen with real condition and give them an inside view of the particular management of the organization. Furthermore, expenses involved are not very big and they consist of time spent for the meeting, text material expense and salary of man in charge of the course.

When the text is prepared by the agencies outside of the company, it is treated in a general way, written in plain language and covers only those phases of production management which the foreman is directly concerned. Usually, the text covers such subjects as; job analysis, handling man, team work, organi-

zation, production wontrol, records, maintenance of equipment and so on. Hypothetical cases are also set up at the end of each lesson. Sometimes a series of questions is used. The foreman is asked to solve these cases or anwwer these questions. In small plant where the number of foremen is small and yet the training is urgent, the text prepared by outside agencies may be used at great advantage. Also correspondence programs can be employed with success by isolated plants.[13]

Texts prepared by outside agencies of course have many shortcomings. It is too general and does not give what the foreman most needs. The benefits may not last very long, because the effect of text study will tear off somewhat if it is not followed in a consistent way. But on the other hand, this method, as other methods, has its place in the program of foreman training. It can plant in the mind of the foreman necessary fundamental information about modern management. A foreman must know the principles of modern machinery of management, if he is expected to cooperate whole heartedly in making it functioning. Also the standardized course performs the extensive function in education and gives the entire supervisory force quickly the necessary fundamental training in teamwork and management. Through constantly continuing periodic conferences under a skilled leader, the benefits obtained from the text study can be made permanent. After all, the text method must not be considered as the be-all and end-all of foreman training. Its weakness should be recognized and provision should be made to fit it to be effective at its highest degree.

Letter conference plan 6f foreman training is another

method. Letters are mailed periodically, usually weekly, to the individual foreman. Each letter deals with a live topic in an interesting and practical manner. Sometimes these letters are sent direct from the unit in the organization which furnishes the service. Sometimes they are issued over the signature of of the president. Periodic meetings are held to discuss the contents of these leeters.[14] This method is considered less expensive, but it does not provide enough instruction and information. It is a sort of plant news and tells the foremen what is going on in the plant. It can be used at davanatge among those, foremen, who have already under-gone through a certain amount of training. To be effective, this method must be a continuous process and conference be held frequently.

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